Appalachian Landscape Conservation Cooperative

Purpose

Initiated in fiscal year 2010, the Appalachian Landscape Conservation Cooperative (ALCC) will facilitate regional conservation planning and design to support existing conservation partnerships and promote innovative conservation approaches. Its landscape-scale planning and design activities will identify priority conservation, monitoring and research needs for a wide range of priority species and their habitats.

The Appalachian LCC will also serve as a coordinated mechanism to predict the effects of climate change on fish, wildlife and plant resources and assess those risks in combination over time with other conservation challenges, such as water quality and quantity, energy development, land conversion and exotic species. The Appalachian LCC will provide scientific and technical expertise to support a collaborative approach that will assist the conservation community in carrying out conservation on a landscape scale.

As mandated by a September 2009 Secretarial Order, the U.S. Fish and Wildlife Service (Service) is collaborating on LCCs with Department of the Interior agencies, states, tribes and other agencies and organizations within a region to establish functional frameworks for LCCs.

An integral partner in the Appalachian LCC will be the U.S. Geological Survey's (USGS) proposed Northern Regional Climate Change Response Center, which will help lead assessments of regional climate change-related impacts and provide vital climate change resources to Appalachian LCC partners.

Cerulean warbler

Geography

The Appalachian LCC extends from southern New York State to central Alabama, and from Southern Illinois to central Virginia. The Appalachian Mountain region exhibits a diverse topography with long broad ridges, steep slopes, deep gorges and wide intermountain valleys. Geologic diversity has resulted in a variety of habitats, such as mountain ponds and bogs, mountaintop barrens and many caves. More than 20 mountain peaks rise above 5,000 feet in elevation with the tallest, Mount Mitchell in North Carolina, at 6,684 feet. A diversity of aquatic habitats are also found in the Appalachians, from small headwater streams to broad rivers such as the Tennessee, French Broad, Clinch, Monongahela, New and Susquehanna. The many combinations of geology, landforms, elevation and soils, coupled and the region's temperate climate, make the Appalachians one of the most biologically diverse areas in the U.S. and home to many endemic species.

The Appalachian LCC and Northern Regional Climate Change Response Center will provide technical ability and consistent monitoring and modeling necessary to effectively apply emerging climate change knowledge to predict habitat and species changes, target conservation actions to address impacts, and monitor systems and conservation actions over time. However, the support provided by the Appalachian LCC will not be limited to climate change; rather, the partnership will work to address broad-scale changes suspected to affect entire ecosystems, for example, the effects of development on water quality and quantity.

Conservation Opportunities

Overarching priorities have not yet been adopted, but the initial efforts of the Appalachian LCC will likely focus on conservation planning and design for priority species such as freshwater mussels, endemic fish, salamanders, migratory birds, bats and rare plants.

The partnership will also focus on unique habitats with high species diversity.

In the Appalachian LCC region, federal trust resources include more than 85 federally listed and 15 candidate species. The region's rivers support native brook trout and one of the most diverse freshwater mussel assemblages in the world. In the Tennessee River basin, the Service's Northeast and Southeast regions have designated three mussel species – purple bean, fanshell and orange foot pimpleback – and one fish, the diamond darter, as spotlight species; similar designations are being developed or exist for other priority watersheds and river basins.

The region of the Appalachian LCC supports 85 to 90 percent of the cerulean warbler breeding population, as well as large populations of several other birds identified as priority species by the Appalachian Mountain Joint Venture; these include golden-winged warbler, wood thrush, Henslow's sparrow, red-headed woodpecker, loggerhead shrike, American woodcock, American black duck and wood duck. Species diversity and the appearance of white-nose syndrome in cave bats heighten the urgency for a strategic and coordinated approach to bat conservation.

Organization

The Appalachian LCC will build upon existing joint ventures, fish habitat partnerships and others to provide biological planning and conservation design to guide conservation work. Actions will be directed at habitat and species resource priorities that are vulnerable to the impacts of climate change and other factors that limit populations of priority species. The three Service regions within the Appalachian LCC have initiated coordination on a scoping process to identify key partners, consider a governance structure, and determine science priorities.

Partnerships

The Appalachian LCC entirely or partially encompasses numerous regional conservation partnerships. These include Appalachian Mountains Joint Venture, Central Appalachians Integrated Landscape of The Nature Conservancy, Central Hardwoods Joint Venture, Eastern Brook Trout Joint Venture, Ohio River Basin Fish Habitat Partnership, Service recovery plan teams, Southeast Aquatic Resource Partnership, Southeastern Bat Diversity Network, state wildlife action plan partnerships, and others.

The National Park Service and National Aeronautics and Space Administration have launched the Appalachian Trail MEGA-transect project for monitoring change through time. The Seneca Nation of Indians has expertise to contribute to conserve native trout and other fisheries, freshwater mussels, eastern hellbender, and black ash. The Appalachian LCC is rich with opportunities for partnerships.

Staffing should be complemented with science funding to:

- update species vulnerability assessments to include climate change influences and identify priority habitat conservation needs;
- coordinate large-scale, standardized monitoring programs to track changes and inform models;
- guide basic research in areas such as white-nose syndrome, habitat-species interactions and environmental contaminants;
- create and manage appropriate GIS layers to use in developing conservation design tools for partners.

Janet Butler/USFWS

Mussels

Capacities

Additional science capacity is needed to bolster and expand existing programs and partnerships. Combining the capabilties from across the conservation community will help to fully develop biological planning and conservation design. At a minimum, capacity needs include a coordinator for partnership development and contract efforts, and a science coordinator. Also needed are a terrestrial and aquatic landscape ecologist/modeler, a hydrologist, and GIS/spatial analysts; these positions are dependent upon available funding.

Next steps

In anticipation of funding for the Appalachian LCC, the Service is reaching out to existing partnerships to help develop this LCC's framework, priorities and governance. In fiscal year 2010, the Service will conduct several scoping meetings to begin organizing ideas about the Appalachian LCC's administration, structure, staffing and conservation priorities. Once funds are appropriated, the Appalachian LCC will be able to immediately hire staff, coordinate or conduct priority research identified by the LCC partnership, and host partner meetings to continue to refine the scoping process.

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To learn more
Please visit the region 5 Web site at:
http://www.fws.gov/northeast/climatechange/

March 2010

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Shenandoah National Park